



THE ODDS OF MATCH FIXING

FACTS & FIGURES ON THE INTEGRITY RISK OF CERTAIN SPORTS BETS

January 2015

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1. INTRODUCTION

As a result of technological advances and particularly the emergence and growth of the online gambling market, sports betting opportunities have increased dramatically, both in terms of the number of sport events and the number of betting markets available. This diversification of the sports betting offer has caused considerable concern among various stakeholders. It is often argued that some of these new betting options pose inherent threats to the integrity of sports events.

In particular, it is suggested that the following types of sports bets would increase the risk of betting-related match fixing:

1. Betting formulas that are weakly correlated to the final outcome of a match, in particular **side bets** (i.e. bets on a specific subset of a game, such as number of corners, team to kick-off the match, who will score the next goal, and which player will get a yellow card).¹ It is commonly assumed that these bets pose substantial integrity risks because an individual can easily manipulate them and the breach of integrity would be difficult to prove. Since this type of manipulation (“spot fixing”) has a smaller impact - and in some cases even no impact whatsoever - on the outcome of the game, the financial, ethical, and sporting sacrifices for sports-cheaters would be diminished.²
2. **Live betting**, i.e. the possibility of betting in real-time during the course of a match (also known as in-play betting or in-the-run betting). A frequently raised argument is that this type of betting, which has been a key driver of online sports betting revenues in recent years,³ poses specific risks because fixers can take advantage of the higher betting limits and variations in the odds to maximise profits. In addition, given the short time frame in which

¹ These bets are also often referred to as “micro bets”.

² These potential integrity risks have also been identified in various studies and reports. See e.g. SportAccord, “Integrity in Sport: Understanding and Predicting Match Fixing” (2011) 28-29; Institut de relations Internationales et Strategiques (IRIS) “Sports betting and corruption: How to preserve the integrity of sport” (2012); Tilburg Universiteit, Vrije Universiteit Amsterdam, Ernst & Young, “Matchfixing in Nederland: de aard en reikwijdte van het probleem, de risico’s en de aanpak” (2013); Lotteritilsynet, Lotteriinspektionen, and National Police Board Gambling Administration, “Match-fixing in the Nordic countries” (2013); Université Paris I Panthéon-Sorbonne and ICSS, “Fighting against the manipulation of sports competitions” (2014).

³ According to estimates, live bets now accounts for more than 70% all sports bets placed online. Université Paris I Panthéon-Sorbonne and ICSS, “Fighting against the manipulation of sports competitions” (2014); The Allen Consulting Group, “Research for the review of the Interactive Gambling Act 2001: Online gambling and ‘in-the-run’ betting” (2012).

betting occurs, the detection of suspicious betting patterns is more challenging in comparison to pre-match betting.⁴

3. Betting on **certain types of sports events** that, so the argument goes, are particularly vulnerable to manipulation such as games where little is at stake in sporting terms (e.g. friendly matches), matches in lower leagues, amateur competitions or events involving minors (youth competitions).

Integrity concerns about these types of sports bets also surface in policy discussions at both the national and European level. As a means to safeguard the integrity of sport and prevent betting-related match fixing, calls are frequently made to prohibit such betting products. For instance, the European Parliament has urged EU Member States to ban live betting, side bets, and betting on youth competitions *“as these have proved to be very vulnerable to match fixing”*.⁵ The Council of Europe Convention on the Manipulation of Sports Competitions, which was adopted by the Committee of Ministers on 9 July 2014, similarly refers to limitations on the supply of sports betting as a relevant anti-match fixing measure. The Convention particularly encourages gambling regulators of the signatory States, where appropriate and following consultation with the national sports organisations and betting operators, to exclude sports events that are easier to manipulate from the regulated sports betting offer.⁶

The recommendation that risks to the integrity of sport should be a factor in determining which sports bets may be offered is certainly a welcome one.⁷ In accordance with applicable legislation, national gambling regulators could play an important role in this context.⁸ Evidently, the degree of risk of different bet types ought to be carefully assessed on the basis of supporting evidence. Yet here lies a problem.

⁴ These potential integrity risks have also been identified in various studies and reports. See e.g. Institut de relations Internationales et Stratégiques (IRIS) “Sports betting and corruption: How to preserve the integrity of sport” (2012); Université Paris I Panthéon-Sorbonne and ICSS, “Fighting against the manipulation of sports competitions” (2014).

⁵ See e.g. European Parliament, resolution of 14 March 2013 on match-fixing and corruption in sport (2013/2567(RSP)); European Parliament, resolution of 10 September 2013 on online gambling in the internal market (2012/2322(INI)).

⁶ Council of Europe Convention on the Manipulation of Sports Competitions, Adopted by the Committee of Ministers on 9 July 2014, Article 9(1). According to the Explanatory Report, non-official competitions, such as friendly matches with no impact on rankings or of little interest in other sporting terms, are particularly vulnerable for corruption.

⁷ See e.g. European Commission, “Staff working document: online gambling in the internal market accompanying the Communication “Towards a comprehensive framework for online gambling” (COM(2012) 596 final) 94-97; Expert Group Good Governance (XG GG), “Deliverable 1: Input on the EU’s role in fighting match-fixing” (June 2012); Council of the EU, Presidency conclusions on establishing a strategy to combat the manipulation of sports results (26-27 November 2012).

⁸ The decision of a betting operator as to what type of bets to include in its offer is by default the result of certain risk assessment measures. Each operator continuously carries out internal risk management analysis to maximize product appeal and turnover and the operator will alter its sports betting product offering accordingly. The management of financial risks may well align with sports integrity risks, but obviously this is not necessarily the case.

Even though knowledge about betting-related match fixing has been steadily growing in recent years, there still is an overall lack of systematic empirical evidence. Previous research on the risks associated with certain sports betting types necessarily had to rely on theoretical risk analysis, consultations with stakeholders (with the obvious disadvantage that information presented by stakeholders is often self-interested), and/or anecdotal evidence on match fixing incidents reported in the media.⁹

This is the first ever study to examine potential links between betting-related match fixing cases and specific types of sports bets on the basis of quantitative empirical evidence. It aims to further the understanding of betting-related match fixing and to inform current policy debates about the appropriateness of limitations on the regulated sports betting offer.

The report is the result of an independent empirical analysis based on two main sources.

First, Sportradar, the world's leading sports betting monitoring company, has provided us with key statistics relating to football matches that its Fraud Detection System (FDS) identified as likely having been manipulated for betting purposes. Since 2009, the FDS has been monitoring global betting activity on tens of thousands of football matches per season. The dataset of highly suspicious football matches, gathered over a period of five years (May 2009–November 2014), offers a most unique evidentiary base to assess to which types of betting market(s) the detected suspect betting activity related.

Second, we collected and analysed representative samples of pre-match and live football matched bets placed with sports betting exchange Betfair, which makes its historical data available for analytical purposes.¹⁰

The report is structured as follows:

- Part 2 offers a regulatory perspective by discussing the experiences of the different EU Member States so far with rules and practices imposing limitations on the offering of certain types of sports bets. It also scrutinises to what extent risks of manipulation of sports events are a decisive factor in determining these limitations.

⁹ This is not a criticism of the academic research available: it is difficult to find primary sources of evidence on betting-related match fixing.

¹⁰ While this dataset only accounts for betting activity with one European regulated online sports betting operator (albeit one of the largest ones) it sufficiently illustrates a main trend regarding the degree of market liquidity in special betting markets that has been generally observed in the literature.

- Part 3 examines the vulnerability of special betting markets for match fixing, and in particular spot fixing, from a market demand perspective. The opportunities for criminal organisations are appraised on the basis of the levels of liquidity in different betting markets, using the data from Betfair as illustration.
- Part 4 examines the vulnerability of certain betting markets for match fixing on the basis of the FDS monitoring statistics. It uses this robust set of empirical evidence to look for patterns between suspected match fixing and different betting types.
- Part 5 presents the main findings and draws out their implications for appropriate regulatory practice.

2. LIMITATIONS ON THE SPORTS BETTING OFFER: REGULATORY EXPERIENCES

To limit the risk of betting-related match fixing, it is often argued that the legislator or national gambling regulator should prohibit sports bets that would pose particular sports integrity risks. Before examining the justifications for this regulatory approach, it is useful to give an overview of the experiences of different EU Member States in this regard.

This part charts existing or anticipated national rules and practices that restrict the regulated sports betting offer and examines to what extent these measures are intended as an anti-match fixing measure.¹¹ The first section provides an overview of national rules and practices that prohibit betting on certain categories of sports events (2.1). The second section identifies restrictions on the types of sports bets that may be offered by regulated betting operators (2.2).

2.1 Exclusion of certain sports events from the betting offer

Only in a few EU Member States, the gambling regulator strictly controls the types of sports events on which betting can be offered by regulated operators (2.1.1). In some other Member States, the national gambling laws prohibit bets on predefined sports events (2.1.2).

2.1.1 List of sports events authorized for betting

France and Italy are currently the only Member States that operate a list of sports events on which licensed operators can offer bets. In Spain, a similar mechanism was repealed in 2013.

In **France**, the legislator strictly regulated the sports betting offer of licensed operators. According to Act No 2010-476 on the opening up to competition and regulation of the online gambling and betting sector, licensed operators can only offer bets on national or international sporting events that have previously been authorized by the French Online Gaming Regulatory

¹¹ For the most part, information on these national rules and practices was obtained through desk research and questionnaires to national gambling regulators of the 28 EU Member States in the context of a previously conducted study: T.M.C. Asser Institute, “Study on betting-related match fixing in the EU 28: risk assessment and management & conflicts of interest”, Commissioned by the European Commission, DG Education and Culture, August 2014.

Authority (ARJEL).¹² Subsequent legislation guides ARJEL in defining the competitions and types of sports on which bets can be accepted.¹³ The list of authorized sporting events is defined, and regularly revised, further to an opinion of the competent sports federation¹⁴ or, failing that, of the Ministry of sports. Four criteria must be considered:

- 1) the organiser of the sports event must be a sports federation mentioned in Article L.131-1 of the Sports Code, an international sports federation, a sports organiser mentioned in Article L.331-2 or Article L.331-5 of the Sports Code or a sports organiser that is legally organized abroad;
- 2) the rules applicable to the sporting events must include provisions on the publicity of the event's results;
- 3) the sporting event does not exclusively involve minors; and
- 4) the sporting event must be capable of attracting a sufficient number of bets.¹⁵

For each sport and each sports event category, ARJEL further defines the types of results of the events on which bets may be offered. Also for this purpose, ARJEL seeks the opinion from the competent sports federation or the Ministry of sports. The types of results can either be the final result of the sporting event or the result of the phases of the game during the events.¹⁶ It follows that side bets, which are separable from final or interim match results, are prohibited. Similarly, bets on elements that cannot be considered a sporting performance (e.g. colour of an athlete's shirt or the identity of a flag carrier in the Olympic Games) are not allowed. The results must be the expression of objective and quantifiable performances of the athletes taking part in the event.¹⁷ Only the sports event organiser can settle the result according to which licensed operators must pay out the bets.

The full list of authorized sports bets is published on ARJEL's website.¹⁸ When the market was first opened in May 2010, the list covered fifteen sports. Since then, ARJEL has regularly amended the list. Currently, the list contains 43 approved sports.

¹² Act No 2010-476 on the opening up to competition and regulation of the online gambling and betting sector of 12 May 2010, Article 12.

¹³ Décret No. 2010-483 du 12 mai 2010 relatif aux compétitions sportives et aux types de résultats sportifs définis par l'Autorité de régulation des jeux en ligne.

¹⁴ The competent federation is the federation empowered by the French State to (1) organize competitions of the concerned sport on the French territory and (2) to exercise disciplinary justice towards people subject to the federation's rules.

¹⁵ Décret No. 2010-483 du 12 mai 2010 relatif aux compétitions sportives et aux types de résultats sportifs définis par l'Autorité de régulation des jeux en ligne, Article 2.

¹⁶ *Idem*, Article 3.

¹⁷ *Idem*.

¹⁸ <http://www.arjel.fr/-Paris-Sportifs-.html>.

Sports betting operators, empowered sports federations or sports event organisers regularly request ARJEL to authorise bets on new sports events or new types of results. ARJEL has consistently refused betting on sports where marking is given (e.g. gymnastics, artistic skating, dressage, and animal training) since, as they involve human judgment, the results are considered as being exposed to increased risks of manipulation.¹⁹

In a series of decisions taken at the end of 2012 and the beginning of 2013, ARJEL also restricted the betting offer on French football, rugby union, volleyball, basketball, and handball championships by excluding bets on games where little is at stake in sporting terms (e.g. games that have no impact on promotion, relegation or qualification for international competitions).²⁰ These restrictions were introduced at the request of the sports event organiser and/or the competent federation following the detection of suspicious betting patterns related to championship matches in which there was nothing at stake for at least one team.

In **Italy**, the gambling regulator (Agenzia delle Dogane e dei Monopoli, ADM) equally determines on which sports events licensed operators can offer bets. The ADM publishes, at least monthly, the official events programme in reference to which bets can be accepted. This list of authorized (sporting) events is established and revised following proposals by the betting operators.²¹ All licensed betting operators' servers must be linked up to the ADM so that every bet can be recorded, monitored, and validated (i.e., the regulator is responsible for validating the results of the event).

Since 2013, licensed operators are also entitled to collect bets on (sports) events that are not included in the official ADM event programme.²² For this purpose, the operator must submit to the regulator a proposal for a "supplementary programme", indicating the nature of new event types and bets that it intends to include and describing the organisational and technical procedures for managing and certifying the events in this programme. All supplementary programmes must be endorsed by the ADM. The bets in the supplementary programme cannot relate to an event or conduct that is contrary to ethics, public order or decency.²³ The approval process of the supplementary programmes proved burdensome, however. The applicable regulation required operators to provide at least two documented sources of information to objectively verify the results of the events. Yet the information provided by the respective

¹⁹ See e.g. ARJEL, Decision No. 2012-042 of 5 April 2012 <<http://www.arjel.fr/-Decisions-de-l-Arjel-.html>>.

²⁰ ARJEL, Decision No. 2012-100 of 29 November 2012; Decision No. 2012-103 of 14 December 2012; Decision No. 2013-005 of 9 January 2013 <<http://www.arjel.fr/-Decisions-de-l-Arjel-.html>>.

²¹ Decree of the Ministry of Finance No 111 of 1 March 2006 regulating fixed-odds betting on sporting events other than horseracing and on non-sporting events, Article 5.

²² Decree of the Ministry of Finance of 18 March 2003 on the offering by authorised licensees of personalised programmes complementing those offered by the Autonomous Administration of State Monopolies (AAMS).

²³ Idem, Article 3(2).

federation often does not cover specific elements (essential for the settling of side bets) or may not be available in real-time (essential for the settling of live bets). Audiovisual recordings could be another reliable source, but it forces the operators to store these recordings for at least 10 years.²⁴ This led the ADM to loosen the technical documentation requirements in 2014. It now authorizes operators to certify bets whose result is unavailable through official sources of information by means of “elements, news, and information” to be assessed by the regulator.²⁵

Contrary to the French regulatory system, the Italian list of authorized sports bets is not envisaged as a regulatory instrument to manage risks associated with the manipulation of sports events. The ADM events programme is based on market demand and the sports event organisers or competent federation is not involved in the process. The ADM’s policy not to include amateur competitions in the events programme is possibly the only exception. The decision to enable licensed operators to broaden their betting portfolio with a customised supplementary programme, and thus to loosen the existing restrictions on the betting offer, equally reflects the acknowledgement of market dynamics as a means of drawing players from illegal gambling to controlled channels. This would ultimately benefit the fight against betting-related match fixing since: *“the recuperation of gaming shares from the illegal market and the monitoring of such shares through IT control systems allows for a more effective monitoring of individual bets, as well as identifying any possible anomalies that could bring to light cases of sports fraud”*.²⁶

In **Spain**, the “practical reality ... of new market needs” similarly persuaded the legislator to abandon the catalogue of authorized sports bets.²⁷ Since the opening up of the Spanish gambling market, the Directorate General for the Regulation of Gambling was empowered to approve and publish a catalogue of sports, competitions, and sports events that may be included in the operators’ betting offer. In relation to each sport, the regulator also defined the list of features or events pertaining to the sports activity that could be the object of betting. Licensed operators were prohibited from offering bets on sports events that were not included in the catalogue.²⁸ In response to the demand of the operators, the regulator modified the catalogue several times to include new sports events. In 2013, the system was abolished. Licensed operators can now establish their own programme of sports events on which bets are offered, which must, however, be reported to the regulator. If the regulator finds that a bet included in the operators’ programme

²⁴ Idem, Article 9(2).

²⁵ Giulio Coraggio, “Italy – Gaming laws changes further liberalize sports betting”, 23 October 2014, <http://blogs.dlapiper.com/mediaandsport/italy-gaming-law-changes-further-liberalize-sportsbetting/>

²⁶ Decree of the Ministry of Finance of 18 March 2003 on the offering by authorised licensees of personalised programmes complementing those offered by the Autonomous Administration of State Monopolies (AAMS).

²⁷ Ministerial Order HAP/1998/2013 of 22 October by which various ministerial orders concerning various types of games are modified, Preamble.

²⁸ Ministerial Order EHA 3080/2011 of 8 November 2011 which approves the basic rules of straight sports betting, Article 14.

contravenes the provisions of the general regulatory framework, it may still demand to suspend or withdraw this bet.²⁹

2.1.2 Exclusion of sports events involving minors

As indicated in the previous section, in **France**, licensed operators cannot offer sports bets on events that “*exclusively involve minors*” as the gambling regulator cannot include such events in the list of authorized sports bets.³⁰

A similar restriction can only be found in the national gambling regulatory framework of one other Member State. In **Denmark**, licensed operators (online and land-based) are prohibited from accepting bets on sports events with adolescents under 18.³¹ The justification for this restriction is the assumption that minors are easier to influence and thus more vulnerable for undue external influence.³²

In **the Netherlands**, new legislation amending the Betting and Gaming Act, which will liberalise the Dutch gambling market by granting licences for online gambling providers, makes reference to the intention to prohibit betting on sports events involving young athletes.³³

2.2 Exclusion of certain types of bets from the betting offer

In most EU Member States, the national gambling regulatory framework only allows fixed odds betting and/or pari-mutuel betting. Hence, other types of bets are implicitly prohibited. Only a few Member States, such as France and Greece, expressly prohibit betting exchanges (even though this is not a different betting type as such).³⁴

²⁹ Ministerial Order HAP/1998/2013 of 22 October by which various ministerial orders concerning various types of games are modified, Article 3.

³⁰ Décret No. 2010-483 du 12 mai 2010 relatif aux compétitions sportives et aux types de résultats sportifs définis par l'Autorité de régulation des jeux en ligne, Article 2.

³¹ Executive order No. 65 of 25 January 2012 on land-based betting, Section 8; Executive Order No 66 of 25 January 2012 on the provision of online betting, Section 23.

³² Explanatory notes to the individual provisions of the Act on Gambling, Comments on Section 11.

³³ The Draft Act amending the Gaming Act, the Gaming Tax Act and certain other Acts in respect of the organisation of remote gaming is currently before the Dutch Parliament.

³⁴ For a discussion, see e.g. J. Hubble and M. Lycka, “The Prohibition of Betting Exchanges is in Breach of EU Law” (2013) 17 Gaming Law Review and Economics (2) 121-128.

In a limited number of Member States, the legislator or the gambling regulator additionally restricts certain types of bets.

A first category of Member States prohibits (sports) bets that are considered contrary to national public policy or ethical principles. In **Belgium**, the Gaming Act stipulates that it is prohibited to offer bets *“on an event or activity that is contrary to public policy or the accepted principles of morality”*.³⁵ In the **Czech Republic**, the Act on Lotteries and Other Like Games only allows bets on (sports) events that are not *“in defiance of any ethical principles”*.³⁶ In **Italy**, licensed operators cannot include bets in their supplementary programme that relate to an event or conduct that is contrary to ethics, public order, and decency.³⁷ While one can imagine certain bets that could be considered unethical (e.g. bets on which player in the competition will first break his leg), the practical relevance of these restrictions appears to be limited.

A second category of Member States prohibits side bets. In **France**, as discussed above, bets can only be offered on the final result of the sporting event or the result of the phases of the game during the events. It follows that micro-bets are prohibited. In **Germany**, the Amended Interstate Treaty on Gambling prohibits bets on individual actions during the sport event.³⁸

A third category of Member States limits the live sports betting offer of authorized betting operators. In **Germany**, betting during a sport event can only be offered on the final results of sports events.³⁹ A similar restriction exists in **Austria**, albeit only in the province of Vorarlberg. Live betting on sport events is generally prohibited, but live bets that are placed on the final match result are permissible.⁴⁰

In **Belgium**, a future Decree will enable the regulator (Gaming Commission) to draw up a list of bets that are prohibited because they are susceptible to fraud. The draft Decree provides that *“each licence holder is prohibited from offering betting possibilities that were designated by the (Gaming Commission) as being susceptible to fraud and published via an informative memorandum of the Gaming Commission on the website”*.⁴¹ No indicative date has been set for the adoption of such a potential list.

³⁵ Gaming Act of 7 May 1999, Article 43/1.

³⁶ Act on Lotteries and Other Like Games of 17 May 1990, Article 26.

³⁷ Decree of the Ministry of Finance of 18 March 2003 on the offering by authorised licensees of personalised programmes complementing those offered by the Autonomous Administration of State Monopolies (AAMS), Article 3(2).

³⁸ Staatsvertrag zum Glücksspielwesen in Deutschland (2012), §21(4).

³⁹ Idem.

⁴⁰ Act on the financial statements and the placement of bets and betting exchange customers, VIb Law Gazette 18/2003 as amended by 9/2012 (Vlb LGBl 18/2003 idF 9/2012), Article 1(6).

⁴¹ Ontwerp van Koninklijk Besluit betreffende de lijst van spelen die mogen worden uitgebaat door houders van aanvullende vergunning via informatiemaatschappij-instrumenten, Article 11(2).

In the **United Kingdom**, the Gambling Commission has the power to restrict certain types of bets offered by licensed operators, but so far it does not consider that “*such intrusive and resource intensive methods would be warranted or effective*”.⁴² This is mainly because the Gambling Commission has so far not been able to establish a pattern of a higher number of betting integrity cases relating to specific types of bets.⁴³ In 2008, the Commission held a consultation on the integrity risks related to live sports betting and found no evidence that this betting type is more at risk of manipulation.⁴⁴

2.3 Conclusions

The preceding overview signals that currently only two EU Member States, France and Italy, systematically control the types of sports bets and types of sports events on which bets can be placed. Only in France, potential risks associated with the manipulation of sports events are a decisive factor in determining these limitations.

In a limited number of other Member States, limitations on the sports betting offer (some of which are intended as anti-match fixing measures) take the form of structural prohibitions contained in the national gambling regulatory framework.

There are at least three reasons why the number of Member States that currently restrict the regulated sports betting offer as an anti-match fixing measure is relatively small.

First, in various Member States, a public or State-controlled operator enjoys an exclusive right to offer sports betting (e.g. Finland and Sweden) and/or the legal offer is presently limited to land-based (pari-mutuel) sports betting (e.g. Portugal and the Netherlands). The gambling regulatory frameworks of these countries contain no or only few provisions relative to the (online) sports betting offer (of the monopolist). As the examples of the Netherlands and Belgium illustrate, however, pending new legislation may lead to the introduction of rules and practices that prohibit certain types of sports bets.

⁴² Gambling Commission, “Protecting betting integrity” (October 2013) at para. 3.6.

⁴³ In 2008, the Commission held a consultation on the integrity risks related to live sports betting and found no evidence that this betting type is more at risk of manipulation. Gambling Commission, *In-running (in-play) betting: position paper* (March 2009).

⁴⁴ Gambling Commission, *In-running (in-play) betting: position paper* (March 2009).

Second, evidence-based justifications for restricting certain types of sports bets are generally lacking. For the most part it is unclear to what extent existing restrictions are based on any supporting evidence. In France, the list of authorized sports bets is defined further to an opinion of the competent sports federation, but it is debatable whether this constitutes objective evidence.

Third, even if integrity benefits would be anticipated, they can only be fully achieved if compliance with the limitations is strictly monitored and if illegal sports betting services are actively prosecuted. This is a challenging task. Furthermore, the experience with the operation of a restricted list of authorized sports bets in Italy and Spain exemplifies how the policy objective to direct customers away from unregulated markets with more attractive betting offers speaks out against the imposition of restrictions. Keeping sports betting activity within regulated, and therefore controlled, channels might be the best way to identify and manage potential integrity risks.

3. SIDE BETS AND THE THREAT OF SPOT FIXING: A MARKET DEMAND PERSPECTIVE

As discussed, the assertion that side bets pose increased risks to the integrity of sport rests on two lines of reasoning. The first argument is that specific events in a match are much easier to manipulate than the final result. Spot fixing may only require the involvement of one individual. The second argument is that this type of manipulation, which has little or no impact on the outcome of the game, would cause less moral hesitancy for the player or referee involved.

To properly assess whether particular sports bets are more susceptible to match fixing, however, it is insufficient to focus only on the supply side. The willingness and opportunities of players or referees to e.g. deliberately attempt to get a yellow card or concede a corner does not necessarily correspond to any substantial demand from criminal organisations.⁴⁵

3.1 Supply and demand for spot fixing

The demand for betting-related match fixing from criminal organisations, which is driven by the aim to make a profit on betting markets, essentially depends on two factors.⁴⁶ First and foremost, demand depends on the size of the profit that is available. In a market with a higher volume of trading, higher stakes can be placed without shifting the bookmakers' odds in an unfavourable direction. In other words, highly liquid betting markets offer a greater chance to make large financial gains. Second, demand depends on the (perceived) risk of detection and punishment for the traders in the betting market that instigated a fix. This detection risk also strongly correlates with the degree of liquidity in the betting market. Large volumes of bets in a limited market are suspicious and expose the traders to risk. In a betting market with high liquidity, however, higher stakes can be placed without attracting undue attention.

Various studies and reports have rightly pointed out that the markets for side bets, at least those offered by regulated operators in Europe, are too illiquid to pose an actual high risk. Albeit not

⁴⁵ David Forrest, "Match Fixing: An Economics Perspective" in M.R. Haberfeld and Dale Sheehan, (eds.) *Match fixing in International Sports: Existing Processes, Law Enforcement, and Prevention Strategies* (Springer, New York 2014) 188-189. In this article, David Forest employs the supply-demand model from the literature on economics and crime, which signals that one must consider the interaction between incentive-based market demand and supply forces to understand changes in the prevalence of corruption over time.

⁴⁶ Idem, 181-182.

presenting actual figures, it is observed that various bookmakers only offer side bets for high-profile events and that European bookmakers generally restrict the maximum bet that will be accepted to limit excessive risk.⁴⁷ This crucial distinction between the potential theoretical risks and the actual risks of side bets is, however, not always accounted for.⁴⁸

3.2 Liquidity of side bets markets

To empirically assess the integrity risks associated with side bets from a demand perspective, we analysed representative samples of pre-match and live football matched bets made available by the historical data archive of sports betting exchange Betfair.⁴⁹

The following two subsections discuss the distribution of football betting volume across different betting markets for two different datasets. The first dataset includes betting on all football matches over a period of one month (3.2.1). The second dataset narrows the focus to bets placed on one football competition that attracts one of the highest volumes of sports bets, namely the English Premier League, over a period of three months (3.2.2).

3.1.1 Dataset A - Betting on all football matches

In October 2014, Betfair offered various betting markets for a total of 2611 football matches from a wide range of domestic and international competitions. The betting markets can be broken down into four broad categories:

1) Main betting markets

The main betting markets include the most popular betting formulas, which relate to the final result of a match: Match Odds (betting on the winner of a match or a draw, i.e. the traditional 1X2 formula) and Total Goals (betting on the total number of goals to be scored in a game, e.g. Over/Under 2,5 Goals).

⁴⁷ See e.g. Institut de relations Internationales et Strategiques (IRIS) "Sports betting and corruption: How to preserve the integrity of sport" (2012) 39-40; Université Paris I Panthéon-Sorbonne and ICSS, "Fighting against the manipulation of sports competitions" (2014) 103-104.

⁴⁸ See e.g. SportAccord, *Integrity in Sport: Understanding and Predicting Match Fixing* (2011) 28-29; Tilburg Universiteit, Vrije Universiteit Amsterdam, Ernst & Young, "Matchfixing in Nederland: de aard en reikwijdte van het probleem, de risico's en de aanpak" (2013); Lotteritilsynet, Lotteriinspektionen, and National Police Board Gambling Administration, "Match-fixing in the Nordic countries" (2013).

⁴⁹ <http://data.betfair.com>.

2) Main derivative markets

The main derivative betting markets, which are derivatives of the main betting formulas, include the Match Winner derivatives and the Goals derivatives. In our sample, the following bets were offered:

Match Winner derivative markets	
Double Chance	Second Half Match Odds
Draw No Bet	Team Win a Half?
Extra Time	Team Win both Halves
Half Time	Team Win from Behind
Half Time / Full Time	
Match Odds and both teams to score	
Goals derivative markets	
Both Teams to Score	Last Team To Score
Correct Score	Next Goal - X Goal
Extra Time - Correct Score	Next Goalscorer - X Goal
Extra Time - Over/Under X Goals	Odd or Even
Exact Total Goals	Race to X Goals
First Goal Odds	Scorecast
First Goal Wincast	Second Half Correct Score
Goal Scored In Both Halves?	Team Clean Sheet?
Half Time Score	Team to Score
Half With Most Goals	Team to Score in Both Halves
	Team Win to Nil

3) Asian Handicap market

Asian Handicap is a form of football betting that gives one of the teams (by default the underdog) a virtual head start in terms of the number of goals in order to make the contest theoretically equal. The bet is settled by adding the handicap to the outcome of the match.

4) Side bets markets

The side betting markets offer betting on specific game facts that are separable from the final outcome of the match and include: (1) Goalscorer markets (betting on which player will score (first) in a game or score a hat-trick); (2) Cards/Bookings markets (betting on the total number of Booking points scored by one team or both teams,⁵⁰ the number of yellow or red cards in a game, and which player gets a card); (3) Corners markets (betting on the number of corners received by one or both teams); and (4) Penalty markets (betting on whether a penalty will be taken by a team).

In our sample, the following side bets were offered for some of the matches:

⁵⁰ Betfair, like most sports betting operators, uses the following points system for Bookings: Yellow Card = 10 points; Red Card = 25 points; and 2 Yellows resulting in an automatic Red = 35 points.

Goalscorer markets	
First Goalscorer	
Hat-trick Scored?	
To Score	
To Score 2 Goals or More	
To Score a Hat-trick?	
Cards/Bookings markets	
Bookings Match Bet	
Bookings Odds	
Cards Over/Under	
Sending Off?	
Shown a Card?	
Corners	
Corners Match Bet	
Corners Odds	
Corners Over/Under	
First Corner	
First Half Corners	
Penalty	
Penalty Taken?	

For each selection within a particular betting market, players have the opportunity to bet on the occurrence (back the selection) or the non-occurrence (lay the selection) of a given event. For example, in the Match Odds market, a player may lay or back three selections reflecting the different outcomes (Home Win, Away Win or Draw) at odds selected by themselves.⁵¹

In October 2014, the combined football betting turnover for all betting markets (matched bets) was £419.330.292.⁵² The table below shows the distribution of the betting volume over the different betting markets.

	Main		Main derivatives		Asian Handicap		Side bets	
Pre-match	89.660.793		13.496.960		1.977.254		1.484.967	
Live	289.029.315		22.112.876		1.356.526		211.601	
Total (%)	378.690.108	90,3	35.609.836	8,5	3.333.780	0,8	1.696.568	0,4

Table 1 – Total betting volume across the betting markets (in £)

The main betting markets account for £378.690.108 or 90,3% of the total betting volume. The amount of stakes in the main derivative markets represents 8,5% of the total betting volume. In comparison, the betting volume in the side bets markets is trivially low (0,4%).

A closer look at the distribution of betting volume within the side bets markets reveals that the Goalscorer markets are by far the most popular: these markets account for about 60% of the £1.696.568 traded across all side bets markets.

⁵¹ Contrary to traditional bookmakers, a betting exchange acts only as a mediator between the players from each side of the market. It will only accept a bet if it is matched by another player.

⁵² The turnover represents all matched volumes (e.g. a £5 back bet matched by a £5 lay bet equals £10 in volume).

	Goalscorer		Cards/Bookings		Corners		Penalty	
Pre-match	943.260		269.037		188.768		83.902	
Live	76.278		128.636		6.662		25	
Total side bets (%)	1.019.638	60,1	397.673	23,4	196.430	11,6	83.927	4,9

Table 2 – Total betting volume across the side bets markets (in £)

These figures clearly indicate that the betting markets on specific events - such as which player will receive a yellow card, which player will score one or more goals or whether a penalty will be awarded during the match - hold very little liquidity in comparison to the highly liquid main betting markets.

One must keep in mind, however, that Betfair only offers side bets for the larger fixtures. The graph below gives an overview of the number of matches for which selections in the different betting markets were available.

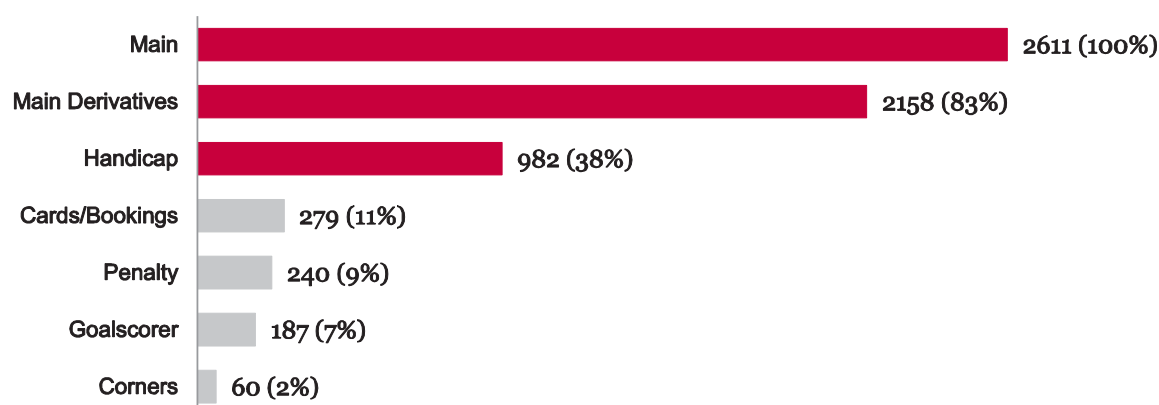


Figure 1 – Markets offered for total of 2611 fixtures

In October 2014, the main betting and main derivative markets were available for all or the majority of the 2611 fixtures. By contrast, side bets markets were only available for approximately 10% of all the football games.

To validate our appraisal of the relative liquidity of the side bets markets, we therefore also analysed a second dataset that only includes betting on high-profile football matches.

3.1.2 Dataset B - Betting on English Premier League

This second dataset includes all matches bets on English Premier League matches, one of the most popular competitions that draws the highest betting volume, over a three-month period (January-April 2014).

For the vast majority of the total number of 120 Premier League matches, Betfair offered all of the above-mentioned betting markets. The combined betting turnover for all betting markets was £855.249.389.

The table below shows the distribution of the betting volume over the different betting markets.

		Pre-match	Live	Total	% total volume
Main		256.697.383	479.343.129	736.040.512	86
Main derivative		47.525.807	52.149.330	99.675.137	11,72
Asian Handicap		4.816.582	1.482.207	6.298.789	0,74
Side bets	Goalscorer	7.762.528	378.796	8.141.324	0,95
	Cards/Bookings	1.851.765	906.935	2.758.700	0,32
	Corners	2.036.676	7.090	2.043.766	0,24
	Penalty	291.161	0	291.161	0,03
Total		320.981.902	534.267.487	855.249.389	100

Table 3 – Total betting volume across the betting markets (in £)

As these figures show, the relative proportion of the betting volume in the side bets markets is slightly higher than in the previous dataset (1,54% in comparison to 0,4%). Yet the liquidity in these markets still pales in comparison to the main betting markets, which account for 86% of the total betting turnover.

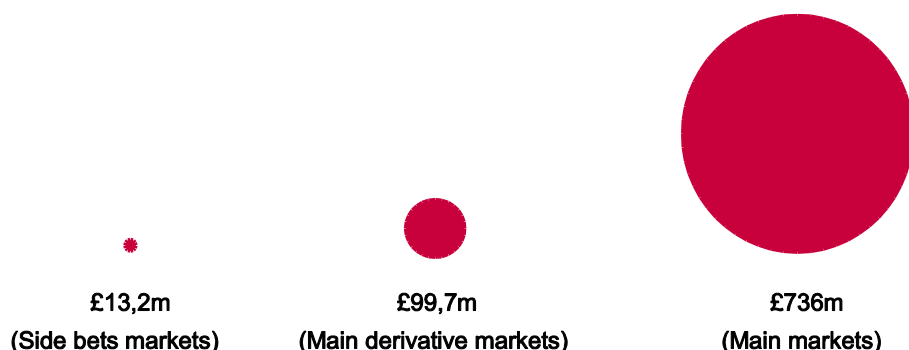


Figure 2 – Total betting volume in betting markets (in million £)

The distribution of betting volume within the different side bets markets is completely in line with those for all football matches. A total of £13,234,951 was traded across all side bets markets. Most of the bets were placed in the Goalscorer markets (61,5% of the betting volume for all special bets markets). The second most popular side bet markets are the Cards/Booking markets (20,8%), closely trailed by the Corners markets (15,4%). Only 2,2% of the side bets related to penalties.

Within the side bets markets, the following 10 selections attracted the highest volume of bets:

		Pre-match	Live	Total	% total volume
Main		256.697.383	479.343.129	736.040.512	86
Main derivative		47.525.807	52.149.330	99.675.137	11,72
Asian Handicap		4.816.582	1.482.207	6.298.789	0,74
Side bets	Goalscorer	7.762.528	378.796	8.141.324	0,95
	Cards/Bookings	1.851.765	906.935	2.758.700	0,32
	Corners	2.036.676	7.090	2.043.766	0,24
	Penalty	291.161	0	291.161	0,03
Total		320.981.902	534.267.487	855.249.389	100

Table 4 – Total betting volume for most popular side bets (in £)

Of all the selections available in the side bets markets for Premier League matches, the First Goalscorer market attracted by far the highest stakes (average £41,856 per match based on 120 fixtures). Relative to the total betting volume, this prompts the conclusion that even the most popular side bet selection for one of the most high-profile football competitions only accounts for 0,59% of the total amounts of bets placed on that competition.

3.2 Conclusions

Despite the obvious limitation of only having access to the volume of bets placed across different betting markets of one sports betting operator, the figures above sufficiently illustrate the simple point that the liquidity in the side betting markets is extremely low. To account for the fact that Betfair, like many European regulated bookmakers, reserves side betting markets for high-profile football matches, we also analysed a dataset comprising only the matched bets for Premier League football matches over a larger period. The conclusions, however, are consistent with the first dataset comprising bets placed on all football matches.

Since a profitable match fixing operation presupposes the ability to place large bets without attracting undue suspicion, the demand from criminal organisations to exploit the side betting markets offered by European regulated betting operators must be considered low. The lack of liquidity in these markets offers the unattractive prospect of limited profits. And even if an operator would accept large bets on specific events in a match, the high stakes would arouse a great deal of suspicion.

The potential risk for individual fraud, i.e. players or referees conceiving and exploiting their own manipulation without intervention of a criminal organisation, could be considered more significant.⁵³ However, if advantage were only taken from the betting opportunities offered by European regulated operators, the profits to be gained from this manipulation (without running the risk of detection) are minimal.

⁵³ See e.g. Université Paris I Panthéon-Sorbonne and ICSS, “Fighting against the manipulation of sports competitions” (2014) 104.

4. RISK ASSESSMENT OF PARTICULAR SPORTS BETS: EMPIRICAL EVIDENCE

The betting monitoring statistics from Sportradar's Fraud Detection System (FDS) enabled us to examine the integrity risks of certain types of sports bets on the basis of robust quantitative empirical evidence. A dataset of football matches worldwide, which the FDS identified as likely to have been targeted for betting-related match fixing over the course of the last five years, was analysed to observe patterns related to the betting object and the type of betting market of the detected suspect betting activity.

4.1 Sportradar's Fraud Detection System (FDS)

Sportradar launched its FDS in 2009. Using pre-delineated algorithms, the FDS provides alerts if it detects anything unusual, be it in the odds,⁵⁴ liquidity, or even regarding the number of bookmakers who have been forced to withdraw their offering on a specific fixture. The algorithms can detect extraordinary odds movements or even odds that are incongruous when compared to Sportradar's calculated odds. This latter function operates in-play, as the FDS has a set of expected odds for every conceivable match scenario.

The FDS monitors betting activity on over 53,000 matches per year in football, tennis, futsal, cricket, rugby union, snooker, and handball across hundreds of different betting operators around the world.

4.2 FDS betting monitoring statistics

Between May 2009 and November 2014, Sportradar's FDS has issued a total of 1625 reports on football matches worldwide that are considered highly suspicious and likely to have been targeted for betting-related match fixing. This represents less than 1% of the total number of football matches that have been monitored by the FDS over the last five years.

⁵⁴ Bookmakers compile their odds based on numerous different factors and statistics but they generally only change their odds for one of three reasons: team news affecting the probability of the outcome; liabilities due to the betting activity of their customers; or to move in line with the rest of the market.

Within this dataset, 1468 matches have been subject to further analysis using an automated Suspicious Market Values function.⁵⁵

The following two subsections discuss the main patterns that emerge from the monitoring statistics as well as the inferences that we can draw from them. The breakdown by the level and type of competitions (4.2.1) is based on the full dataset of 1625 football matches that were escalated by the FDS. The breakdown by the type of betting market (4.2.2) is based on the slightly smaller dataset of 1468 football matches for which suspicious market data is available.

4.2.1 Breakdown by the level and type of competitions

The overwhelming majority of the total amount of football matches that the FDS identified as highly suspicious (1625) related to domestic football matches (88% or 1435 matches) in different jurisdictions.

By contrast, only a fraction of the matches concerned international club matches (6% or 96 matches) or national team matches (6% or 94 matches).

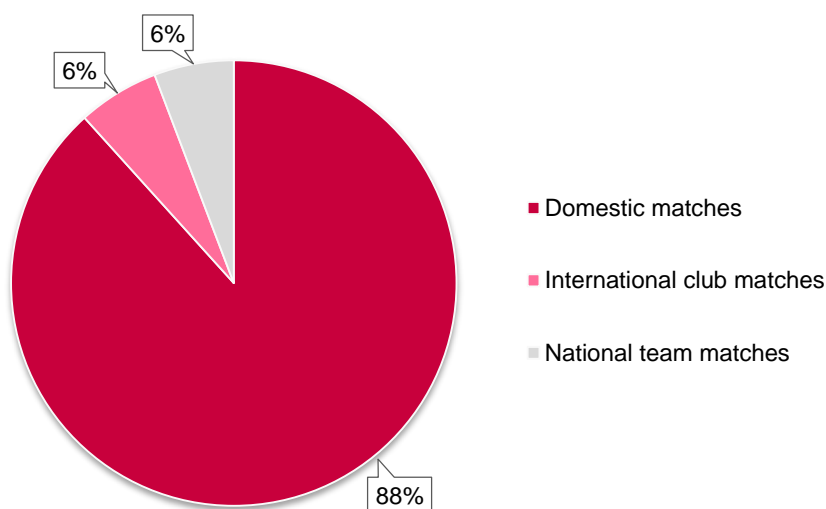


Figure 3 – Number of likely manipulated matches (level of competition)

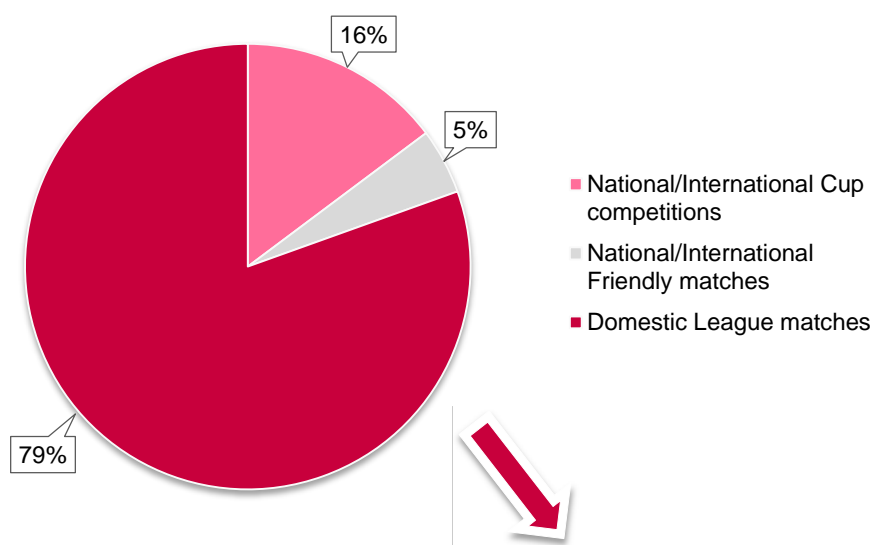
⁵⁵ Suspicious market values are automatically exported from the FDS based on alert activity within each match.

The breakdown per competition format further suggests that domestic league football rather than top-level international football is the main target of betting-related match fixing. Of the 1625 escalated matches, 79% were domestic league fixtures (1286 matches).

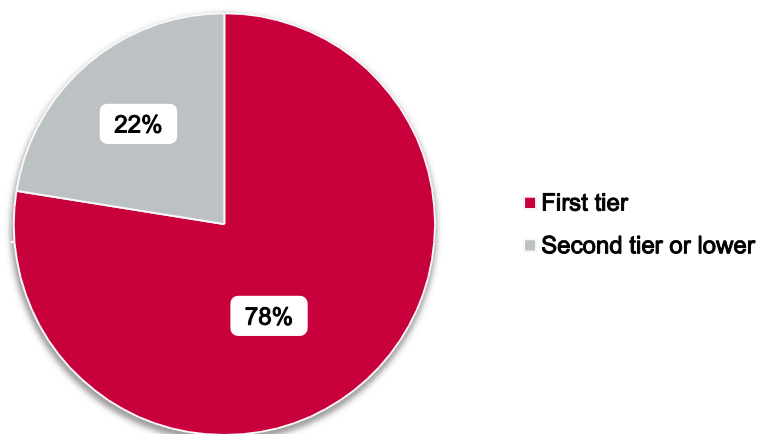
Interestingly, most of the escalated domestic league matches (997) were played in the first tier league (78%) rather than the second and lower tier league (or lower).

To a certain extent this runs counter to the common sense assumption that lower leagues, where media attention is scarce and salaries small, are more susceptible to manipulation in return for financial reward. One must keep in mind, however, that for third and lower tier football leagues matches the rate of systematic monitoring of betting activity by Sportradar is lower; the same is true for other non-domestic league events. Yet this does not mean that betting on such competitions is not monitored.⁵⁶

Apart from domestic league football, 16% of the escalated matches involved national cup competitions or international cup / club football competitions (263). Only 5% of the escalated matches related to national and international friendly matches (76).



⁵⁶ At the very least, betting operators use their own surveillance systems as part of their internal risk management and in most EU Member States in which online betting can be legally offered operators are obliged to report suspicious betting activity to the gambling regulator. See Oxford Research and VU Amsterdam, "Study on the sharing of information and reporting of suspicious betting activity in the EU 28", Commissioned by the European Commission, DG Education and Culture, August 2014.



Figures 4 & 5 – Number of likely manipulated matches (type of competition)

Competitive youth football and amateur football constitute only a tiny fraction (3%) of the total number of escalated matches (45 matches). With only 3 escalated matches, women's professional football represents an even smaller percentage (0,2%).

4.2.2 Breakdown by the types of betting markets

To assess the integrity risks associated with different betting markets we analysed the slightly smaller dataset of 1468 football matches for which suspicious market data is available.⁵⁷

In 38% of the cases (551 matches) the irregular betting activity prompted bookmakers to either partially or completely remove the betting offer on the match in question - either pre-match or live.

At the outset, it is opportune to make a general remark about live betting. Contrary to the prevalent view that live betting inherently produces risks to sports integrity that would not be present for traditional pre-match betting, the monitoring statistics indicate that in the majority of cases, irregular betting patterns were detected both pre-match and live.

For 67% of the likely manipulated matches both suspicious pre-match and live betting was observed (982 matches). Only for 248 matches (or 17% of the total number of matches) irregular betting patterns were detected solely in relation to live betting. This is thus comparable to the number of instances where only suspicious pre-match betting was detected (238 matches).

⁵⁷ As the suspicious market data was automatically exported from the FDS, the author of this report is solely responsible for the accuracy of these analysis results.

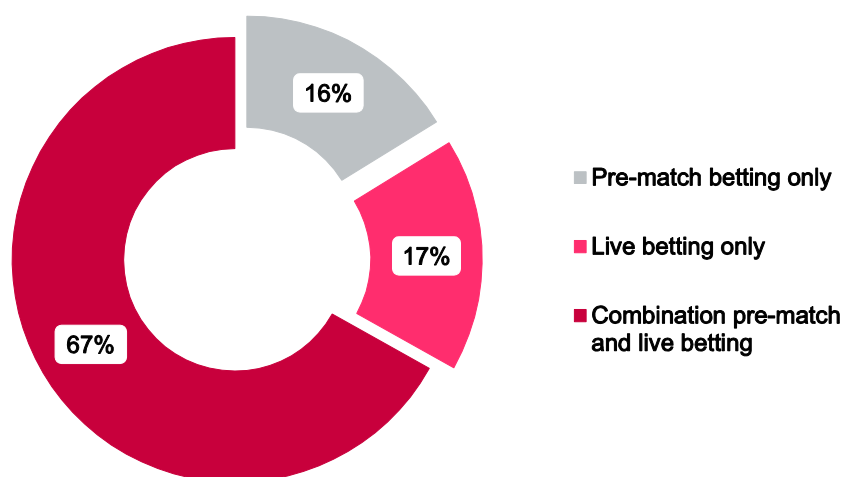


Figure 6 – Irregular betting patterns detected pre-match and/or live

It was already discussed that most football betting happens during the match. Moreover, fixed games will typically see suspicious patterns in live betting since informed bettors can strategically benefit from variations in the odds and higher betting limits to ensure higher profits. Yet at the same time, it must be stressed that vast majority of the likely manipulated games equally revealed indications of suspicious pre-match betting (even though the size of the stakes may pale in comparison to the live betting).

Of all the key betting markets for which the FDS tracks odds movements, almost all suspicious betting patterns were observed in the main betting markets (including Match Odds and Total Goals) and the Asian Handicap market.⁵⁸ Once again, it appears that match fixers mostly take advantage of highly liquid betting markets, which all relate to the final outcome of a match. Furthermore, this also reveals that the fix of having a particular team losing or winning by a predefined margin (i.e. number of goals) is the most common method of betting-related match fixing.

For the 1468 likely manipulated football matches, suspicious betting patterns were detected in:

⁵⁸ Asian Handicap markets are typically considered as a “main” betting market as they attract similarly high volumes, but to be consistent with the categorization in Part 2 we continue to make this distinction (i.e. this general trend is not true for Betfair).



Figure 7 – Markets with irregular betting patterns

In sharp contrast, only for 6 matches suspicious betting was detected in side betting markets. This represents a mere 0,4% of the 1468 likely manipulated matches.

It should be reiterated that for many matches, side bets markets are not available. Moreover, the FDS only monitors these markets for a limited amount of competitions – precisely because they are unlikely to be targeted for betting-related match fixing. Nonetheless, it is telling that for those matches where suspicious betting activity was detected in the side bets markets, irregular betting patterns also appeared in at least one of the other above-mentioned markets.

Suspicious betting activity in only one market

For only small number of the likely manipulated matches, suspicious betting patterns occurred in only one of the above-mentioned betting markets (Asian Handicap markets, Total Goals markets or Match Odds markets): 285 matches contained suspicious pre-match betting in only one market and 162 matches contained suspicious live betting in only one market.

The following table and graph show a breakdown of the number of games for each market while also indicating whether the irregular betting activity related to pre-match betting, live betting or both.

	Pre-match	Live	Both pre-match and Live
Match Odds only	110	24	4
Asian Handicap only	95	71	7
Total Goals only	80	67	4

Table 5 – Irregular betting patterns detected in one betting market only

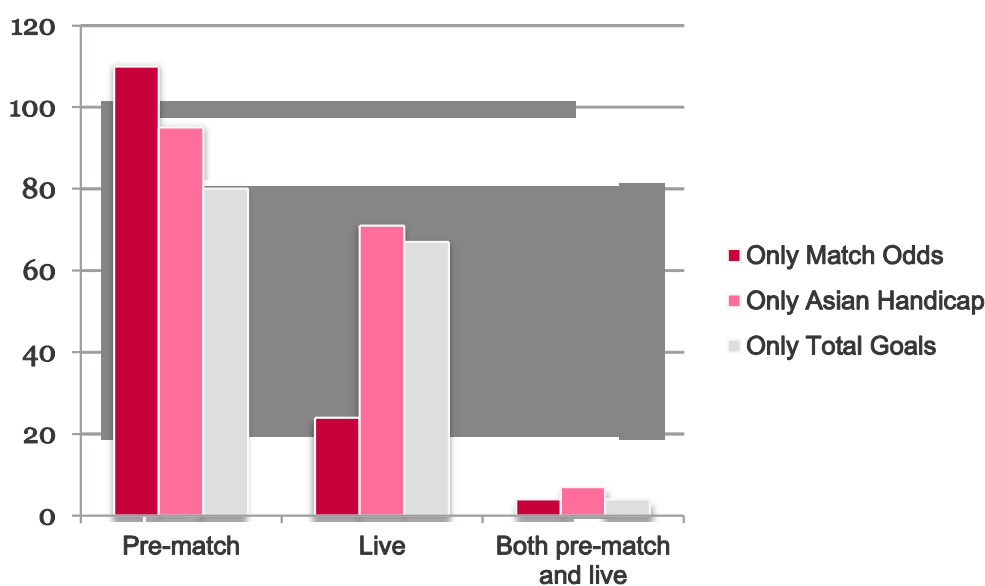


Figure 8 - Irregular betting patterns detected in one betting market only

Suspicious betting activity in a combination of markets

It follows that for the majority of likely manipulated matches, suspicious betting patterns occurred in multiple betting markets.

To an extent this is to be expected since the main betting markets are related to each other. Taken together with the finding that for two-third of the likely manipulated matches suspicious pre-match and live betting was detected, however, this strongly suggests that match fixers, in an attempt to avoid the risk of detection and minimize loss of profit, will generally choose to exploit not one, but several betting markets and options.

In the majority of instances, the fraudulent activity was apparent in all of the three markets (883 matches).

	Pre-match	Live	Pre-match and Live	Total
Match Odds + Asian Handicap + Total Goals	445	454	126	883

Table 6 – Irregular betting patterns in all three main betting markets

4.3 Conclusions

Three important findings can be inferred from the FDS betting monitoring statistics.

First, what emerges is a clear pattern: the main betting markets used for betting-related match fixing in football relate to the final score and the number of goals scored during the game (i.e. Match Odds and Total Goals markets). By extension, the traditional fix of having a particular team losing by a predefined margin still appears to be a frequently used method (which enables a maximisation of profit on the Asian Handicap and Total Goals betting markets). The monitoring statistics overwhelmingly support the earlier observation that highly liquid betting markets are a prerequisite for betting-related match fixing by criminal organisations. Furthermore, the focus of the fraudulent betting activity reveals that for most of the likely manipulated matches the manipulation could realistically only have been achieved through coordinated action by several players and/or the involvement of the referee.

Second, the prevalence of suspicious betting in the Handicap markets, and in particular Asian Handicap markets, clearly reflects the fact that the Asian betting markets (where these types of bets are immensely popular) account for the majority of illicit funds being bet on football.⁵⁹ According to estimates, over 70% of the betting turnover for football is recorded with Asian bookmakers.⁶⁰ European regulated bookmakers restrict stakes and disclose client details to law enforcement authorities. The Asian system of bookmaking (i.e. bets are collected from the street, betting shops, online and telephone betting and are passed up through a hierarchical agent system),⁶¹ on the contrary, allows bets to be placed anonymously and without betting limits. Hence, it is clear as to why professional fixers predominantly choose the Asian bookmakers to directly place their bets with.

Third, in most cases, more than one of the main betting markets was exploited and irregular betting patterns were detected both in pre-match and live betting. This evidence does not support the claim that live betting, by its very nature, would significantly encourage manipulation in comparison to pre-match betting.

⁵⁹ See e.g. INTERPOL, “Match-fixing in Football: Training Needs Assessment (2013) 16; Université Paris I Panthéon-Sorbonne and ICSS, “Fighting against the manipulation of sports competitions” (2014) 81-83.

⁶⁰ Sportradar, “World Match-Fixing: The problem and the solution” (2014) 10.

⁶¹ Idem, 10-11.

5. CONCLUSIONS

Even though knowledge and awareness about betting-related match fixing has been steadily growing in recent years, a number of misconceptions still abound. The persistence of these misconceptions is compounded by the fact that systematic empirical evidence about betting-related match fixing is not readily available.

Media reports and interested stakeholders often suggest that certain types of sports bets significantly increase the risks of match fixing occurring. These concerns also surface in policy discussions at both the national and European level. Frequently calls are made to prohibit the supply of “risky” sports bets as a means to preserve the integrity of sports competitions.

In a first-ever attempt to assess the integrity risks associated with certain types of sports bets on the basis of quantitative empirical evidence, we uniquely obtained access to key statistics from Sportradar’s Fraud Detection System (FDS). A five-year dataset of football matches worldwide, which the FDS identified as likely to have been targeted by match fixers, enabled us to observe patterns and correlations with certain types of sports bets. In addition, representative samples of football bets placed with sports betting operator Betfair were collected and analysed.

The results presented in this report, which challenge several claims about the alleged risks generated by certain types of sports bets, hope to inform policy makers about the cost-effectiveness of imposing limits on the regulated sports betting offer.

5.1 Main findings

1. Betting-related match fixing is predominantly related to the final outcome of a match and in particular to the number of goals (winning margin).

The FDS monitoring statistics reveal that the betting markets used for betting-related match fixing in football typically relate to the final score and the number of goals scored during the match. Almost all of the suspicious betting activity is detected in the most popular sports betting markets: the Match Odds market (i.e. the traditional 1X2 betting formula), the Total Goals market, and the Asian Handicap market.

The fix of having a particular team losing or winning by a predefined (minimum) margin is by far the most frequently observed method of betting-related match fixing. This is because, when manipulating a match to lose by multiple goals, profits can be maximized. This manipulation can only be realistically achieved through coordinated action by several players and/or the involvement of the referee.

The monitoring statistics thus overwhelmingly support the observation that betting markets with the highest degree of liquidity are most attractive for match fixers. These markets offer the best opportunity to make large financial gains with lower risks of being detected.

2. The claim that side bets pose significant match fixing risks lacks empirical support.

The demand from criminal organisations to exploit the side betting markets, at least those offered by European regulated sports betting operators, must be considered low. The analysis of the volume of bets placed across the different markets with sports betting exchange Betfair exemplified that the liquidity in the side betting markets is extremely low in comparison to the main betting markets.

Side bets are a betting product geared toward recreational bettors. European sports betting operators often offer side bets only for higher-profile events (where the players involved would be less likely to risk losing their careers over a spot fixing operation) and ordinarily restrict the stakes that will be accepted. Even if an operator would accept large bets on e.g. which player will get a yellow card, the high stakes would arouse a great deal of suspicion. Subsequently, also the potential for individuals to exploit this type of sports bet for their own benefit is very limited.

Even though the FDS does not monitor side bets for every match (nor are they available for every football match) it remains telling that suspicious betting activity has only been detected for a tiny fraction of matches (6) and that for those matches irregular betting patterns also appeared in the main markets. This does not suggest that the threat of spot fixing must be entirely discarded.⁶² The key take away is rather that the focus of efforts to prevent, investigate, and sanction betting-related match fixing should lie on fraud linked to organised crime.

⁶² A small number of spot fixing instances have been documented, see e.g. <http://www.dailymail.co.uk/news/article-1210882/Football-legend-Matthew-Le-Tissier-admits-10-000-Premier-League-betting-scam.html>.

3. The claim that live betting would poses a specific or greater match fixing risk in comparison to traditional pre-match betting lacks empirical support.

One of the key points that emerges from the FDS monitoring statistics is that match fixers, in an attempt to spread the risk of detection and minimize loss of profit, will typically choose to take advantage of both pre-match and live betting options in the three main betting markets (Match Odds, Total Goals, and Asian Handicap).

For two-thirds of the likely manipulated matches both suspicious pre-match and live betting patterns was observed and for the vast majority of matches irregular betting patterns appeared in a combination of these markets.

Although live betting offers some benefits to ensure higher profits (higher betting limits and advantage can be taken of the variations of the odds) and time to detect match fixing is more limited, the statistics reveal that the inside information will typically also be used in pre-match betting.

4. Domestic league football rather than top-level international football is the main target of betting-related match fixing. The evidence also points to a higher number of incidents in relation to first tier league matches than second tier league matches.

International club football competitions and national team matches only represent a fraction of the total amount of football matches identified by the FDS as likely to have been manipulated. Most of the likely manipulated matches related to domestic football league fixtures (78%). The majority of these matches were played in the first tier league rather than the second tier league.

5.2 Implications for policy making

There is a growing consensus that professional match fixers predominantly use Asian bookmakers to directly place their bets with. European regulated bookmakers restrict stakes, require registration and identification of the player, and even withdraw betting markets in the case of

irregular betting activity. The Asian system of bookmaking (agent system), on the contrary, allows bets to be placed anonymously and without betting limits.

Nonetheless, the imposition of restrictions on the regulated sports betting is often suggested as an appropriate anti-match fixing measure.

If one considers that, in absence of EU harmonization in this field, it is up to each EU Member State to define an appropriate gambling policy, it appears counterintuitive that a national prohibition of certain types of sports bets would make sports events less vulnerable for betting-related match fixing. Regardless of such measure it would still be possible to place such bets on the same events elsewhere in the world.

That said, risks to the integrity of sport should arguably be a factor in determining which sports bets may be offered by regulated operators. In order to strike the right balance with the policy objective of directing customers away from unregulated markets (with more attractive betting offers), however, it is crucial that such a risk assessment is based on reliable supporting evidence.

The discussion of the regulatory experience demonstrated that a limited number of EU Member States impose limits on the offering of certain types of (sports) bets. Unfortunately, for the most part it is unclear whether and to what extent existing restrictions are evidence-based. Some other Member States are currently considering the option of introducing certain limitations on the regulated sports betting offer (e.g. the Netherlands and Belgium).

On the basis of quantitative empirical evidence, this research has found no correlations between live betting or side betting and possible instances of betting-related match fixing in football that would justify a prohibition of these bet types. Regarding betting on certain types of events, it cannot be ruled out that betting on certain football competitions (such as youth competitions, third and lower tier league matches, and (national) friendly matches) might increase the risk of match fixing occurring - empirical evidence to make such an assessment is regrettably unavailable.

